

W. Tecumseh Fitch, Ph.D.

full name: William Tecumseh Sherman Fitch III*
US Citizen: Born Boston, Massachusetts (1963)

Professor, Department of Cognitive Biology
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Teaching/Professional Experience

Current Position: (2009 - present) Professor of Cognitive Biology, University of Vienna

2003-2009: Senior Lecturer and Reader, School of Psychology, University of St. Andrews
Dec 2005- Mar 2006: Leibniz Professor, & Visiting Scholar, Max Planck Institute EVA, Leipzig.
2002-2003: Fellow, European Institute for Advanced Study, Berlin, Germany.
1999-2002: Lecturer: Biology & Psychology Departments, Harvard University.

Graduate Teaching Assistant & Lecturer, Brown University (1989-1994)
Computer Programmer/Consultant: Boston, Providence, New York and Innsbruck. (1988-2001)
Medical Translator (German to English): Innsbruck, Austria. 1988.
Research Assistant (Coral reef fish ethology) with Dr. D. Y. Shapiro: H. Steinitz Marine Lab, Eilat, Israel & Dept. Marine Science, Univ. of Puerto Rico 1986-1988.

Education

Postdoctoral Fellow, Harvard/MIT Speech & Hearing Science Program, (1996-1999)
Ph.D., Cognitive and Linguistic Sciences, Brown University, (1989-1994)
B.A. with honors, Biology, Brown University, (1981 -1986)

Research Awards and Academic Honors

ERC Advanced Grant Awardee: Sept 2009 (European Research Council)
Honorary Professor, University of St Andrews Psychology Department
Leibniz Professorship (Visiting Professorship, University of Leipzig) - Oct 2005- Mar 2006
Recipient, John G. Pisano award, National Institutes of Health, (July 2003)
Fitch, W. T. "The evolution of language" **The Kennedy Lecture**. (Ohio University, Jan, 2004)
Invited Fellow, European **Advanced Studies Institute**, Berlin, Germany (2002-2003)
National Institutes of Health Postdoctoral Fellowship, (1996 -1999).
German-American Exchange Fellowship: "Evolution of Intelligence". May 1998-99.
Visiting Fellow, BC Advanced Systems Institute. Victoria, British Columbia January 1995.
Research Grant from Apple Computer "Sonification of Physiological Sounds". January 1993.
National Science Foundation **Research Fellow** (three years). September 1990.
Selected participant, McDonnell Cognitive Neuroscience Institute, Dartmouth, July 1990.
National Institutes of Health Intramural Research Training Award. June, 1990.
James F. Kidwell Prize in Population Biology, Brown University. May 1986.
Elected to Sigma Xi. May 1986.
Explorer's Club Research Grant. July 1985.
Sigma Xi Grant In-Aid of Research. Dec 1984.
1981 US National Merit Scholarship Finalist.

Editorial/Advisory Boards

Editorial Boards: *Journal of Experimental Psychology, General and Bilingualistics*
Advisory Board: *Oxford Studies in Bilingualistics*
Committee Member: Technical Committee on Animal Bioacoustics, Acoustical Society of America; European Society for Philosophy & Psychology
Scientific Advisor: Human Origins Museum Exhibition (American Museum of Natural History, New York, NY, USA) and BioMusic Museum Exhibition Funded by NSF, \$5.5 million US

Research Interests and Projects

Research Interests: The evolution and neural basis of cognition and communication.
Biolinguistics. Bioacoustics: physiology and perception of vertebrate vocalization (including human speech). The evolution of animal communication systems, including speech, language and music. Biomusicology. Theoretical biology. Sonification (Auditory display of data - I have a patent in this field). Biology and Aesthetics.

Selected Research Projects:

2005-2010: Book: "The Evolution of Language" (Cambridge University Press)
 2003 - present: Syntax of Mind/Biolinguistics: Comparative Analysis of pattern perception in humans and animals, using formal language theory as a computational framework
 1999 - present: Bioacoustics and vocal production: formant production and perception in nonhuman vertebrates (mainly mammals and birds: collabo
 1997 - present: Biophysics and computer modeling of vertebrate vocal production (collaboration with Hanspeter Herzel, physicist, Institute of Theoretical Biology, Berlin)
 1998 - present: Vocal production & evolution of communication in mammals
 1998 - 2001: Cineradiographic & electromyographic study of mammalian vocal production (collaboration with A. W. Crompton, functional morphologist, Harvard University)
 1997 - 1999: MRI analysis of human vocal anatomy & development (w/ Jay Giedd, NIH)
 1994 - 1999: Correlation between vocal anatomy, formants & body size in animals & humans.
 1994 - 1997: Comparative and theoretical analysis of tracheal elongation in birds
 1989 - 1994: PhD Thesis: vocal tract length and the evolution of human language.
 1990 - 1994: Sonification: the use of sound to perceive data (w/ W A Schloss, U. Victoria)
 1985 - 1990: Social behavior in sex-changing coral reef fish (w/ Douglas Shapiro, U. Puerto Rico)

Research Funding

I am currently funded by an ERC Advanced Grant SOMACCA: Syntax of Mind: A Comparative Computational Approach (five years, 2 million euro: 2009-2013) and a Research Cluster Award (Neuroscience of Music and Language) from the University of Vienna. Previous funding includes ERC FP7 Grant CHLASC (ended 2008), and US funding from the NIH, NSF, and Apple Computer.

Professional Affiliations

Acoustical Society of America, American Psychological Society, American Institute of Physics, Sigma Xi, European Society for Philosophy & Psychology, International Community for Auditory Display.

Languages/Computer Programming

I am a native speaker of English and reasonably fluent in German. Other languages in order of descending fluency: Spanish, French, Portuguese.

Experienced programmer in Python, C, Matlab, Pascal, BASIC and Motorola 68K assembly language; Unix and Macintosh operating systems. As a computer consultant, specialized in developing graphic interfaces and computer simulations for scientific applications (hydrogeology, asbestos management, tropical ecology). Recent focus: digital signal processing for acoustic analysis and synthesis of animal sounds and human speech, sound synthesis for auditory presentation of data, and physical modeling of acoustic systems.

Publications (I currently have 89 publications including 48 journal articles (not counting book reviews) and 29 book or encyclopedia chapters. Of my journal articles 43 are peer-reviewed and I am first author on 31) . High impact journals indicated in **bold** type.

Top 8 publications:

1. Fitch, W. T. (2010). The Evolution of Language. (Book) Cambridge University Press.
2. Fitch, W. T., Huber, L., & Bugnyar, T. (2010). Social Cognition and the Evolution of Language: Constructing Cognitive Phylogenies. *Neuron*, 65, 795-814.
3. Fitch, W. T. (2006). "The biology and evolution of music: A comparative perspective," *Cognition* 100, 173-215.
4. Fitch, W. T., & Hauser, M. D. (2004). Computational constraints on syntactic processing in a nonhuman primate. *Science*, 303, 377-380.
5. Hauser, M., Chomsky, N. & Fitch, W. T. (2002). The Language Faculty: What is it, who has it, and how did it evolve? *Science*, 298, 1569-1579.
6. Fitch, W.T. and D. Reby (2001), The descended larynx is not uniquely human. *Proceedings of the Royal Society, B*, 268(1477): 1669-1675.
7. Fitch, W. T. (2000). "The evolution of speech: a comparative review," *Trends in Cognitive Sciences* 4(7): 258-267.
8. Fitch, W. T. (1997). "Vocal tract length and formant frequency dispersion correlate with body size in rhesus macaques," *Journal of the Acoustical Society of America* 102: 1213-1222.

The rest backwards by date:

9. Fitch, W. T. (2011). Unity and diversity in human language. *Philosophical Transactions of The Royal Society B: Biological Sciences* 366: 376-388
10. Invited contribution: "Vocal Learning in Bats", Nature Research Highlights, **Nature Publishing**

11. Fitch, W. T. (2011). "Deep Homology" in the Biology & Evolution of Language. In A. M. Di Sciullo & C. Boeckx (Eds.), *The Biolinguistic Enterprise: New Perspectives on the Evolution and Nature of the Human Language*. Oxford: Oxford University Press. 135-166
12. Charlton, B. D., Ellis, W. A. H., McKinnon, A. J., Brumm, J., Nilsson, K., and Fitch, W. T. (2011). "Perception of male caller identity in koalas (*Phascolarctos cinereus*): acoustic analysis and playback experiments," *PLoS ONE* 6, e20329.
13. de Boer, B., and Fitch, W. T. (2010). "Computer models of vocal tract evolution: An overview and critique," *Adaptive Behavior* 18, 36-47.
14. Herbst, C., Fitch, W. T., and Svec, J. G. (2010). "Electroglottographic wavegrams: A technique for visualizing vocal fold dynamics noninvasively," *J. Acoustic. Soc. Am.* 128, 3070-3078.
15. Titze, I. R., Fitch, W. T., Hunter, E. J., Alipour, F., Montequin, D., Armstrong, D. L., McGee, J., and Walsh, E. J. (2010). "Vocal power and pressure-flow relations in excised tiger larynges," *Journal of Experimental Biology* 213, 3866-3873.
16. Fitch, W. T. (2010). "How Language Evolved: Putting it to the test," *New Scientist* 2010, 58-61.
17. Fitch, W. T. (2010). "Three Meanings of "Recursion: Key Distinctions for Biolinguistics," in volume *"Language Evolution"* edited by R. Larson, *et al.*
18. Braccini, S, Lambeth, S, Schapiro, S, & Fitch, W T (2010). Bipedal Tool Use Strengthens Chimpanzee Hand Preferences. *J Human Evolution*, 58(3), 234-241.
19. Fitch, W. T. (2009). Dispatch: Biology of Music: Another One Bites the Dust. *Current Biology*, 19(10), R403-404.
20. Fitch, W. T. (2009). Birdsong normalized by culture. *Nature*, 459, 519-520.
21. Fitch, W. T. (2009). Prolegomena to a future science of biolinguistics. *Biolinguistics*, 3(4), 283-320.
22. Fitch, W. T (2009) "Fossil Cues to the Evolution of Speech" in volume *"Cradle of Language"*, Botha and Knight, Eds. (Oxford University Press)
23. Fitch, WT (2009) " The Biology & Evolution of Language: "Deep Homology" and the Evolution of Innovation" in *The Cognitive Neurosciences IV* (ed. Gazzaniga, M. S.) (MIT Press)
24. Fitch, W. T., von Graevenitz, A., and Nicolas, E. (2009). "Bio-Aesthetics, Dynamics and the Aesthetic Trajectory: A Cognitive and Cultural Perspective," in *Neuroaesthetics*, ed M. Skov (Baywood).
25. Fitch, W. T. (2009). "Prolegomena to a Science of Biolinguistics".(pp 15-44 in *"Learning from Animals?"* edited by Louise Roeska-Hardy, Psychology Press, London)
26. Fitch, W. T. (2008). "Co-evolution of phylogeny and glossogeny: There is no 'logical problem of language evolution'" *Behavioral & Brain Sciences* 31: 521-522.
27. Fitch, W. T. (2008). "Glossogeny and Phylogeny: Cultural Evolution meets Genetic Evolution," *Trends in Genetics* 24(8): 373-374
28. Fitch, W. T. (2008). "Animals and the biology of music," in *The New Encyclopedia of Neuroscience*, edited by L. R. Squire, et al. (Elsevier, Oxford, UK).
29. Fitch, W. T. (2008). "Nano-Intentionality: A Defense of Intrinsic Intentionality," *Biology and Philosophy* 23: 157-177
30. Fitch, W. T. (2007). "Linguistics: An Invisible Hand," *Nature* 449, 665-667.
31. Fitch, W. T. (2007). "The Evolution of Language: A Comparative Perspective," in *Oxford Handbook of Psycholinguistics*, edited by G. Gaskell (Oxford University Press, Oxford).
32. Fitch, W. T., and Rosenfeld, A. J. (2007). "Perception and production of syncopated rhythms," *Music Perception*. 25: 43-58
33. Fitch, W. T. (2007). "Evolving Meaning: The Roles of Kin Selection, Allomothering and Paternal Care in Language Evolution," in *Emergence of Communication and Language*, edited by C. Lyon, C. Nehaniv, and A. Cangelosi (Springer, New York) pp 29-51.
34. Fitch, W. T., and Fritz, J. B. (2006). "Rhesus macaques spontaneously perceive formants in conspecific vocalizations," *J. Acoustic. Soc. Am.* 120:2132-2141
35. Fitch, W. T. (2006). "Production of Vocalizations in Mammals," in *Encyclopedia of Language and Linguistics*, edited by K. Brown (Elsevier, Oxford), pp. 115-121.
36. Fitch, W. T. (2006). "The biology and evolution of music: A comparative perspective," *Cognition* 100, 173-215.
37. Fitch, W. T. (2006). "On the biology and evolution of music," *Music Perception* 24, 85-88.
38. Zaccarelli, R., Elemans, C. P. H., Fitch, W. T., and Herzog, H. (2006). "Modelling Bird Songs: Voice Onset, Overtones and Registers," *Acta Acustica*.
39. Harris, T., R, Fitch, W. T., Goldstein, L. M., and Fashing, P. J. (2006). "Black and white colobus monkey (*Colobus guereza*) roars as a source of both honest and exaggerated information about body mass," *Ethology* 112, 911-920.
40. Hatzikirou, H., Fitch, W. T., and Herzog, H. (2006). "Voice instabilities due to source-tract interactions," *Acta Acustica* 92, 468-474.
41. Fitch, W. T. (2006). Production of Vocalizations in Mammals. In K. Brown (Ed.), *Encyclopedia of Language and Linguistics* (2nd ed., Vol. 10, pp. 115-121). Oxford: Elsevier.
42. Reby, D., McComb, K., Cargnelutti, B., Darwin, C., Fitch, W. T., and Clutton-Brock, T. (2005). "Red deer stags use formants as assessment cues during intrasexual agonistic interactions," *Proc. Roy. Soc. Lond.*, B 272, 941-947.
43. Fitch, W. T. (2005). "The Evolution of Music in Comparative Perspective," in *The Neurosciences and Music II: From Perception to Performance*, edited by G. Avanzini, L. Lopez, S. Koelsch, and M. Majno (New York Academy of Sciences, New York), pp. 29-49.
44. Fitch, W. T. (2005). Dancing to Darwin's Tune: Review of Mithen 2005. *Nature*, 438:288

45. Fitch, W. T., Hauser, M. D., & Chomsky, N. (2005). The Evolution of the Language Faculty: Clarifications and Implications. *Cognition* 97(2): 179-210.
46. Fitch, W. T. (2005). Protomusic and protolanguage as alternatives to protosign (comment on Arbib). *Behavioral & Brain Sciences*, 28(2), 132-133.
47. O'Donnell, T. J., Hauser, M. D., & Fitch, W. T. (2005). Using mathematical models of language experimentally *Trends in Cognitive Sciences*, 9(6), 284-289.
48. Fitch, W. T. (2005). Computation and Cognition: Four distinctions and their implications. In A. Cutler (Ed.), *Twenty-First Century Psycholinguistics: Four Cornerstones* (pp. 381-400). Mahwah, New Jersey: Lawrence Erlbaum.
49. Fitch, W. T. (2005). The evolution of language: A comparative review. *Biology and Philosophy*, 20, 193-230.
50. Fitch, W. T. (2004). "Vocal Production System: Evolution," in *MIT Encyclopedia of Communication Sciences and Disorders*, edited by R. D. Kent (MIT Press, Cambridge, MA), pp. 56-59.
51. Fitch, W. T. (2004). The search for meaning: Review of King 2004. *Nature*, 432, 804-805.
52. Fitch, W. T. (2004). Die Stimme - aus biologischer Sicht. In B. Felderer (Ed.) (pp. 85-102). Berlin: Matthes & Seitz.
53. Fitch, W. T. (2004). The evolution of language. In: *The Cognitive Neurosciences* (3rd Edition, Ed. by Gazzaniga, M.). Cambridge, MA: MIT Press.
54. Fitch, W. T. (2004). Evolving Honest Communication Systems: Kin Selection and "Mother Tongues". In: *Evolution of Communication Systems: A Comparative Approach* (Ed. by Oller, D. K. & Griebel, U.). Cambridge, Massachusetts: MIT Press.
55. Fitch, W. T., Neubauer, J., & Herzog, H. (2002). Calls out of chaos: The adaptive significance of nonlinear phenomena in mammalian vocal production. *Animal Behaviour*. 63: 407-418
56. Fitch, W. T. & Hauser, M. D. (2002). Unpacking "Honesty": Vertebrate Vocal Production and the Evolution of Acoustic Signals. In: *Acoustic Communication* (Ed. Simmons, A. M., Fay, R. R. & Popper, A. N.), pp. 65-137. New York: Springer.
57. Fitch, W. T. (2002). The Evolution of Spoken Language: A Comparative Approach. In: *International Conference on Spoken Language Processing* (Ed. by Hansen, J. L.), pp. 1-8. Denver, Colorado: University of Colorado.
58. Fitch, W. T. (2002). Primate Vocal Production and its Implications for Auditory Research. In: *Primate Audition: Ethology and Neurobiology* (Ed. Ghazanfar, A.), pp. 87-108. Boca Raton, FL: CRC Press.
59. Hauser, M. D. & Fitch, W. T. (2002). What are the uniquely human components of the language faculty? In: *Language Evolution: The State of the Art* (Ed. by Christensen, M. & Kirby, S.), pp. 158-181. Oxford: Oxford University Press.
60. Weissengrüber, G. E., Forstenpointner, G., Peters, G., Kübber-Heiss, A. & Fitch, W. T. (2002). Hyoid apparatus and pharynx in the lion (*Panthera leo*), jaguar (*Panthera onca*), tiger (*Panthera tigris*), cheetah (*Acinonyx jubatus*), and domestic cat (*Felis silvestris f. catus*). *Journal of Anatomy (London)*, 201, 195-209.
61. Fitch, W. T. (2002). Comparative Vocal Production and the Evolution of Speech: Reinterpreting the Descent of the Larynx. In: *The Transition to Language* (A. Wray, Ed.), Oxford: Oxford University Press pp 21-45
62. Gennari, S., Sloman, S., Malt, B. & Fitch, W. T. (2002). Motion Events in Language and Cognition. *Cognition* 83: 49-79.
63. Loeb, R. G. & Fitch, W. T. (2002). A laboratory evaluation of an auditory display designed to enhance intraoperative monitoring. *Anesthesia and Analgesia*, 94, 362-368.
64. Fitch, W. T. (2002). The evolution of language comes of age. *Trends in Cognitive Sciences*, 6, 278-279.
65. Fitch, W. T. (2001) Review of 'Approaches to the Evolution of Language'. *Anthrop.Linguistics* 43: 236-242.
66. Fitch, W. T. (2000). Vocal production in nonhuman mammals: Implications for the evolution of speech. *The Evolution of Language: Proceedings of the 3rd International Conference*, 102-103.
67. Fitch, W. T. (2000) Skull dimensions in relation to body size in nonhuman mammals: The causal bases for acoustic allometry. *Zoology* 103: 40-58.
68. Jungers, W. J., Holloway, R. L., Fitch, W. T. & Smith, R. J. (2000). Brain size and body size covariation in hominoids. *American Journal of Physical Anthropology*, Supp 30, 191.
69. Fitch, W. T. (2000). "Evolution of speech: Reply to Skoyles" *Trends in Cognitive Sciences* 4: 405-406
70. Fitch, W. T. (2000). "The evolution of speech: a comparative review," *Trends in Cognitive Sciences* 4(7): 258-267.
71. Fitch, W. T. (2000). "The phonetic potential of nonhuman vocal tracts: Comparative cineradiographic observations of vocalizing animals," *Phonetica* 57: 205-218.
72. Fitch, W. T., & Kelley, J. P. (2000). "Perception of vocal tract resonances by whooping cranes, *Grus americana*," *Ethology* 106(6): 559-574.
73. Riede, T., & Fitch, W. T. (1999). "Vocal tract length and acoustics of vocalization in the domestic dog *Canis familiaris*," *Journal of Experimental Biology* 202: 2859-2867.
74. Fitch, W. T. (1999): "Review of 'The Origin and Diversification of Language'". *American Anthropologist*.

75. Fitch, W. T. and Giedd, J (1999): "Morphology and development of the human vocal tract: A study using MRI". *Journal of the Acoustical Society of America* 106: 1511-1522.
76. Fitch, W. T. (1999): "Acoustic exaggeration of size in birds by tracheal elongation: Comparative and theoretical analyses" *Journal of Zoology* (London) 248: 31-49. (Discussed in "News & Views", *Nature* 399: 109.
77. ICAD-NSF Report Committee, G. Kramer (Ed.) (1999): "The Sonification Report: Status of the Field and Research Agenda". National Science Foundation White Paper. Report authors: G. Kramer (Ed.), B. Walker, T. Bonebright, P. Cook, J. Flowers; N. Miner; J. Neuhoff, R. Bargar, S. Barrass, J. Berger, G. Evreinov, W. T. Fitch, M. Grohn, S. Handel, H. Kaper, H. Levkowitz, S. Lodha, B. Shinn-Cunningham, M. Simoni, S. Tipei
78. Mergell, P., Fitch, W. T., & Herzog, H. (1999). "Modeling the role of non-human vocal membranes in phonation," *Journal of the Acoustical Society of America* 105(3): 2020-2028.
79. Fitch, W. T. (1998). "Vocal tract dynamics during calling in nonhuman animals," *Journal of the Acoustical Society of America* 104(3): 1811.
80. Hauser, M. D. and Fitch, W. T. (1998): "Reidentification and Redescription". *Behavioral & Brain Sciences* 21.
81. Fitch, W. T. and Hauser, M. D. (1998): "Differences that make a difference: Do locus equations result from physical principles characterizing all mammalian vocal tracts?" *Behavioral & Brain Sciences* 21(2): 264-265.
82. Fitch, W. T. (1998). "Modules, Minds and Mutant Monkeys: A Review of 'The Symbolic Species' by Terrence W. Deacon," Boston Review of Books, March.
83. Fitch, W. T. S (1998). U.S. Patent 5730140 "Sonification system using synthesized realistic sounds modified by other medically-important variables for physiological monitoring".
84. Fitch, W. T. (1997) "Innate mechanisms & the evolution of language," *Mother Tongue* 3: 123-134.
85. Fitch, W. T. (1997). "Vocal tract length and formant frequency dispersion correlate with body size in rhesus macaques," *Journal of the Acoustical Society of America* 102: 1213-1222.
86. Fitch, W. T. and Hauser, M. D. (1995): "Vocal Production in Nonhuman Primates: Acoustics, Physiology and Functional Constraints on "Honest" Advertising". *American Journal of Primatology* 37: 191-219.
87. Fitch, W. T. and Kramer, G. (1994): "Sonifying the Body Electric: Superiority of an Auditory over a Visual Display in a Complex, Multi-Variate System". In: "Auditory Display. Sonification, Audification, and Auditory Interfaces" (Ed. G. Kramer). Santa Fe Institute Studies in the Sciences of Complexity, Vol 18. Reading, MA: Addison-Wesley.
88. Fitch, W. T. (1994). *Vocal tract length perception and the evolution of language*. Ann Arbor, Michigan: UMI Dissertation Services.
89. Norcross, J. L., Newman, J. D. and Fitch, W. T. (1994): "Responses to Natural and Synthetic Phee calls by Common Marmosets (*Callithrix jacchus*)". *American Journal of Primatology* 33: 15-29.
90. Fitch, W. T. S and Shapiro, D. Y. (1990): "Spatial Dispersion and Non-Migratory Spawning in the Bluehead Wrasse (*Thalassoma bifasciatum*)". *Ethology* 85: 199-211

In press publications:

91. Fitch W. T (in press) Dispatch: How Special is Speech Perception? **Current Biology**
92. Fitch, W. T. (in press). "Genes, Language, Cognition, and Culture: Towards Productive Inquiry," Hum. Biol. 83, in press.
93. Fitch, W. T., and Gingras, B. (in press). "Multiple varieties of musical meaning," *Physics of Life Reviews* in press.
94. Fitch, W. T., and Mietchen, D. (in press). "Convergence and Deep Homology in the evolution of spoken language," in *Birdsong, Speech and Language: Converging Mechanisms*, edited by J. J. Bolhuis, and M. B. H. Everaert (MIT Press, Cambridge, Massachusetts).
95. Fitch, W. T., and Zuberbühler, K. (in press). "Primate Precursors to Human Language: Beyond Discontinuity," in *The Evolution of Emotional Communication*, edited by E. Zimmerman, and E. Altenmüller (Oxford University Press, Oxford), p.??
96. Fitch, W. T. (in press). Music and the evolution of language. In H. Pashler (Ed.), *The Encyclopedia of the Mind*: Sage.
97. Fitch, W. T. (in press). Innateness and human language: A biological perspective. In M. Tallerman & K. Gibson (Eds.), *The Oxford Handbook of Language Evolution* (pp.??-??). Oxford: Oxford University Press.
98. Fitch, W. T. (in press). Musical protolanguage: Darwin's theory of language evolution revisited. In J. J. Bolhuis (Ed.), *Birdsong and Music*. Oxford.
99. Fitch, W. T. (in press). "The Biology and Evolution of Rhythm: Unravelling a Paradox," in *Language and Music as Cognitive Systems*, edited by P. Rebuschat (Cambridge University Press, UK).
100. Stoeger, A., Charlton, B. D., Kratochvil, H., and Fitch, W. T. (in press). "Vocal cues indicate level of arousal in infant African elephant roars," *J. Acoustic. Soc. Am.*

Keynote and Plenary Talks (selection):

Keynote Speaker: Voice Foundation 40th Symposium **Philadelphia** 2 June 2011
Plenary: "Evolution of the Voice" **Goteborg** 10 April 2011
Plenary: 2nd Conference of CompCog : "Evolution of Vocal Learning " **Prague** 25 May 2011
Opening Plenary: German Primatological Society Meeting: "The Evolution of Language: A Broad Comparative Perspective" (**Hannover**; 24 Feb 2009)
Plenary: Symposium on Human Evolution, **Santa Barbara**, California. April 2009
Plenary: "Language Evolution": **Chicago** Linguistic Society. (April, 2008)
Keynote: Design Principles in Animal Communication; International Conference on Animal Communication, Corballis, **Oregon**. Aug, 2008
Keynote Speaker, Annual Conference of the International Linguistic Association (**New York City**; March 2007)
Keynote Speaker on the topic of language evolution: International Conference on Evolution of Language (Rome), International Conference "Cradle of Language" (**Cape Town**, 2006)
Plenary speaker at the 2nd International Conference on "The Future of Science" (**Venice**), "The Future of Biology" (televised on Italian TV; 2006)
Plenary on Communication at International Conference "Where is Theoretical Biology Heading" (**Berlin** 2006)
The Kennedy Lecture: "The evolution of language" (**Ohio** University, Jan, 2004)
Keynote: "The evolution of speech: A comparative approach" - lecture at the International Conference on Spoken Language Processing, **Denver**, Colorado (2002)

Public Understanding of Science/Press Coverage:

I have lectured to popular audiences on animal communication and on the evolution of music and language in many different venues. I have debated Creationists about evolution in several venues (most recently in a British Parliamentary style debate at the University of St Andrews Debating Society). My work has been featured in many newspapers and magazines including the New York Times, the Guardian, Science News, New Scientists, Der Spiegel, Le Monde, The New Yorker, Discover, Natural History and on international broadcast media including the BBC nightly news, National Public Radio, Radio 3 Italia, and the Norwegian Broadcast Company. Two full-length documentaries featuring my research have appeared on Danish and German television.

Editing and Peer Reviewer

I have reviewed grants for the US NIH and NSF, and for the UK BBSRC and Leverhulme Foundation, as well as French, German, Israeli and Portuguese funding bodies. I am an Associate Editor for the Journal of Experimental Psychology: General. I have reviewed manuscripts for Science, Nature, Current Biology, PLoS Biology, Proceedings of the National Academy of Sciences (USA), and Proceedings of the Royal Society, and the following journals (listed alphabetically): Acta Acustica, Animal Behaviour, American Journal of Primatology, Behavioral Ecology & Sociobiology, Biology Letters, Brain & Behavioral Sciences, Cognition, Ethology, Evolution & Human Behavior, Folia Primatologica, Journal of the Acoustical Society of America, Journal of Cognitive Neuroscience, Journal of Comparative Psychology, Journal of Experimental Psychology, Journal of Experimental Child Psychology, Journal of Human Evolution, Journal of Speech & Hearing Science, Journal of Theoretical Biology, Neuroscience & Biobehavioral Reviews, Philosophy & Biology, Philosophical Transactions of the Royal Society, PLoS One, Psychological Review, Trends in Cognitive Sciences, Zoological Journal of the Linnean Society, Zoology.

**About the name:* My parents named me after my great-great-great-grandfather, General William Tecumseh Sherman (1820-1891), who was in turn named after the great Shawnee chief and general Tecumseh (1768-1813). "Tecumseh" has always been used as my given name (never William), as was the case for General Sherman himself.